

R E M A R K S

In the present Office Action mailed June 5, 2007, claims 1-34 were pending before the Office. Of these, claims 1 and 18 were the only independent claims. The Examiner rejected all the claims under 35 U.S.C. §103. No claims have been amended.

A. REJECTION UNDER 35 U.S.C. §103

On page 2 of the present Office Action, claims 1-34 are rejected under 35 U.S.C. §103 as being obvious over U.S. Publication No. 2001/0011338 (Bonola) in view of Applicants admitted prior art on page 1 of the present Application. Claims 1 and 18 are the only independent claims. For reasons explained below, Applicants respectfully traverse this rejection.

As a preliminary matter Applicants respectfully object to the Examiner's combination of Applicants' Background Section (characterized as "admitted prior art" by the Examiner) with the Bonola reference. Examiner incorrectly asserts that the so-called admitted prior art of the present Application discloses the storage of data using group entries and pre-allocating the memory by dividing the memory into one or more sections of an anticipated group size. However, Applicants submit that Examiner is misinterpreting candid discussion of the prior art that actually illustrates the need for the novel invention disclosed in the present Application. For example, the Background of the present application specifically discusses a scenario where "[t]he allocation of sizes to each of the sections of memory based on data anticipated to be received may suffice **if the anticipated data**

is actually received by the hardware. However, if the hardware receives a different set of data, portions of which must be stored in group entries of sizes different than the anticipated set of data, such a **pre-allocation of size to sections of the memory may result in an inefficient allocation of memory.**" Thus, Applicants respectfully do not agree with nor accept the Examiner's assertion that an **anticipated** group size is somehow the same as receiving a set of data. Accordingly, Applicants submit that the Examiner is improperly mischaracterizing and/or modifying language from the Background Section of the present Application in an untenable attempt to combine so-called admitted prior art with the Bonola reference. Applicants respectfully request withdrawal of the Section 103 rejection based on this inappropriate combination.

Regardless of the above deficiencies and to primarily to expedite prosecution, Applicants further note the following deficiencies in the Examiner's arguments. Independent claims 1 and 18 include the features of "... **if** a free group entry of the size required by the portion of the set of data **does not exist** ... allocating one of the sections of an unallocated size **to the size required** ... creating a section of a dynamically allocated size..." or the like. The present Application is directed to methods and apparatus for allocating memory for a network processor. For example, the Application teaches methods and apparatus that allow **dynamic** allocation of entries of varying sizes from the memory **as required by a set of data.** In contrast to such dynamic allocation of entries from the memory as required by a set of data, the Bonola reference is generally directed to an application that examines a heap data structure and a free

list, identifies an unallocated region of memory **that is appropriately sized**, and allocates the memory to the application. (Bonola, Abstract).

Applicants submit that Bonola fails to teach or suggest at least the features of allocating one of the sections of an unallocated size to the size required **if a free group entry does not exist**. Applicants' independent claim 1 recited that "... **if** a free group entry of the size required by the portion of the set of data **does not exist** ... allocating one of the sections of an unallocated size **to the size required** ... creating a section of a dynamically allocated size." Independent claim 18 recites similar features.

In contrast to the above recited features of the independent claims, the Bonola reference teaches that the instruction will fail if the alleged group size does not exist. (See Bonola, paragraph 0038). The Examiner alleges that the above recited features of independent claims 1 and 18 are taught or suggested in paragraphs 0038 and 0039. (Office Action, page 3).

With regards to paragraph 0039 of Bonola, Applicants submit that the Bonola reference fails to even suggest, much less teach the features where a free group entry of the size required by the portion of the set of data **does not exist**. In paragraph 0039, the Bonola reference teaches that "[i]f the remaining half of the heap subregion contains **twice as much memory as is required** by the requesting application, the remaining half of the heap subregion can be further divided in half." Thus, Applicants submit that paragraph 0039 is not applicable where a group size free group entry of the size required by the portion of the set of data **does not exist**.

Thus, Applicants submit that paragraph 0039 fails to teach the above recited features of the independent claims 1 and 18.

Turning to paragraph 0038 Bonola, Applicants submit that there is nothing in paragraph 0038 to suggest the elements of "... **if** a free group entry of the size required by the portion of the set of data **does not exist** ..." or its equivalent. In paragraph 0038, Bonola teaches that "...the value of N is compared to M (step 512), and if N exceeds M, then the there is **no heap subregion** 302A-302F within heap 302 **which can accommodate a demand for X bytes of memory** from application 202. Accordingly, the **HeapAlloc(X) instruction will fail** for the application 202 (step 514)." Thus, the reference appears to describe an error state in this situation and does not appear to even contemplate allocating memory once such a failure occurs. There does not appear to be any other teachings in paragraph 0038, or the entire reference, that Applicants believe could reasonably be interpreted as the same as or equivalent to Applicants' recited features of "... if a free group entry of the size required by the portion of the set of data does not exist ... allocating one of the sections of an unallocated size to the size required ... creating a section of a dynamically allocated size." Accordingly, Applicants assert that the prior art teaching of a condition in which a HeapAlloc(X) instruction will fail described the Bonola reference is not the same as or equivalent to allocating one of the sections of an unallocated size to the size required.

Thus, for at least the above reasons, Applicants submit that Bonola, alone or in combination with the admitted prior art, fails to teach, suggest, or render obvious, all of the features of the invention as claimed in independent claims 1 and 18. Accordingly, Applicants assert that the independent

claims 1 and 18 are allowable under 35 U.S.C. §103 over the Bonola reference alone or in combination with the admitted prior art.

B. CONCLUSION

Since the Applicants assert that all the independent claims as amended are in condition for allowance and all remaining claims properly depend from the independent claims, Applicants assert that all claims are allowable.

Applicants do not believe a Request for Extension of Time is required but if it is, please accept this paragraph as a Request for Extension of Time and authorization to charge the requisite extension fee to Deposit Account No. 04-1696. Applicants do not believe any additional fees are due regarding this Amendment. However, if any additional fees are required, please charge Deposit Account No. 04-1696.

Respectfully Submitted,



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